



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/778,006	02/12/2004	John C. Bruce	039159.00417	3346
26712	7590	03/31/2006	EXAMINER	
HODGSON RUSS LLP ONE M & T PLAZA SUITE 2000 BUFFALO, NY 14203-2391			MARMOR II, CHARLES ALAN	
			ART UNIT	PAPER NUMBER
			3736	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/778,006

Applicant(s)

BRUCE ET AL.

Examiner

Charles A. Marmor, II

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09222005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed January 12, 2006. The Examiner acknowledges the amendments to the specification and the amendments to claims 1, 13 and 25-27. Claims 1-38 are pending.

Drawings

2. The drawings were received on November 21, 2005. These drawings are acceptable.

Claim Objections

3. Claims 3, 6, 15, 26 and 28 are objected to because of the following informalities:
 - a. At claim 3, line 2, “and” (first occurrence) should read --adapted to be--.
 - b. At claim 6, line 1, “comprises” should read --comprised--.
 - c. At claim 15, line 2, “and” (first occurrence) should read --adapted to be--.
 - d. At claim 26, line 16, “Wherein” should read --wherein--.
 - e. At claim 28, line 2, “and” (first occurrence) should read --adapted to be--.Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3736

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, 8-12, 26-30 and 32-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Rathjen ('400). Rathjen teaches a device that determines the inner pressure (IOP) of the eye, that effectively is a contact tonometer. The device includes a single contact surface (11) for making contact with a surface of the eye (alternatively, the portion of sensor' framing the sensor array may be considered the contact surface); a single micro-electro-mechanical system (MEMS) device (111) connected to the contact surface (col. 4, lines 21-22); an electronics unit (14) for receiving the electrical signal and converting an electrical signal from the MEMS device to an IOP signal that is representative of the IOP of the eye; a display (120) for receiving the IOP signal from the electronics unit and displaying information that is representative of the IOP of the eye; and a power source for supplying electrical power to the electronics unit and the display. The MEMS device produces an electrical signal corresponding to the force applied by the contact surface to the surface of the eye. An activation switch is connected to the device (col. 8, lines 44-46). A disposable membrane that is non-reactive and bio-compatible is disposed at the contact surface and positioned between the contact surface and the surface of the eye (col. 5, lines 52-55). The power source is batteries (col. 9, lines 12-13). The MEMS device, display and the electronics unit may be formed together in an integrated circuit (col. 6, lines 13-30 and col. 7, lines 22-43). The electronics unit may include a microprocessor or an application specific integrated circuit. The MEMS device is in direct

Art Unit: 3736

contact with the contact surface. The device may be arranged such that a first housing contains the MEMS device and contact surface and a second housing contains the display (Figure 3), where the first housing is capable of being attached to a human finger and the second housing is capable of being attached to a human hand via an adhesive or tape. Alternatively, the device may be arranged as a single housing containing the contact surface, the MEMS device, the electronics unit, and the display (Figure 2), where the housing is capable of being hand-held. The contact tonometer of Rathjen includes at least a single contact surface and at least a single MEMS device and is fully capable of producing a measurement indicative of IOP using only a single contact surface and a single MEMS device.

6. Claims 1, 3-5, 8, 10-12, 26-30, 32 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by den Besten et al. (1993). Den Besten et al. teach a device that determines the inner pressure (IOP) of the eye, that effectively is a contact tonometer. The device includes a contact surface for making contact with a surface of the eye; a micro-electro-mechanical system (MEMS) device connected to the contact surface; an electronics unit for receiving the electrical signal and converting an electrical signal from the MEMS device to an IOP signal that is representative of the IOP of the eye; a display for receiving the IOP signal from the electronics unit and displaying information that is representative of the IOP of the eye; and inherently a power source for supplying electrical power to the electronics unit and the display. The MEMS device produces an electrical signal corresponding to the force applied by the contact surface to the surface of the eye. A disposable membrane (film) that is non-reactive and bio-compatible is disposed at the contact surface and positioned between the contact surface and the surface of the

eye. The MEMS device and the electronics unit may be formed together in an integrated circuit. The electronics unit may include a microprocessor or an application specific integrated circuit. The MEMS device is in direct contact with the contact surface. The device may be arranged within a housing that is capable of being hand-held.

7. Claims 1-5, 10-12, 26, 28-30 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Fleischman et al. ('449). Fleischman et al. teach a device that determines the inner pressure (IOP) of the eye, that effectively is a contact tonometer. The device includes a contact surface (14) for making contact with a surface of the eye; a micro-electro-mechanical system (MEMS) device (18) connected to the contact surface; an electronics unit (50) for receiving the electrical signal and converting an electrical signal from the MEMS device to an IOP signal that is representative of the IOP of the eye; a display (246) for receiving the IOP signal from the electronics unit and displaying information that is representative of the IOP of the eye; and a power source for supplying electrical power to the electronics unit and the display. The MEMS device produces an electrical signal corresponding to the force applied by the contact surface to the surface of the eye. An activation switch (244) is connected to the device. A disposable membrane (20) that is non-reactive and bio-compatible is disposed at the contact surface and positioned between the contact surface and the surface of the eye. The electronics unit may include a microprocessor (240) or an application specific integrated circuit. The MEMS device is in direct contact with the contact surface.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rathjen ('400) in view of Fisher ('843). Rathjen, as discussed above, teaches all of the limitations of the claims except that the power source is common electrical power provided through a power line. Fisher teaches that batteries and a power cord are interchangeable as means for supplying power to a portable tonometer (col. 9, lines 3-15). It would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made that a power line could be provided in lieu of batteries in a device similar to that of Rathjen, as a design choice in light of the teachings of Fisher, merely substituting one known power source for another that is known to be equally effective in powering a tonometer.

10. Claims 13-18, 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rathjen ('400) in view of Rathjen ('686). Rathjen ('400), as discussed above, teaches all of the limitations of the claims except that the housing is shaped to receive a portion of a human finger. Rathjen ('686) teaches a device for detecting intraocular pressure measurements. The device includes a sensor (12) having a contact surface, an electronics unit (17), and a display (175), where all the aforementioned components are mounted on or in a support housing. In one

Art Unit: 3736

embodiment, the support housing includes a first housing member (11) shaped to receive a portion of a human finger and arranged in such a fashion that the contact surface may be brought into contact with the eye without bringing the remainder of the contact tonometer into contact with the eye. Noting that a finger can be interpreted as part of a hand, a second housing member (11b) is coupled to the first housing member and shaped to receive a portion of a human hand (see Figures 4 and 4a). The second housing member (11b) includes the display. It would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to use a support housing arrangement similar to that of Rathjen ('686) to hold and apply the sensor contact surface of Rathjen ('400) to the surface of an eye, in order to provide a contact tonometer that is easy to handle and permits self-application.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rathjen ('400) in view of Rathjen ('686) as applied to claim 13 above, and further in view of Fisher ('843).

Rathjen ('400), as modified by Rathjen ('686) above, teaches all of the limitations of the claims except that the power source is common electrical power provided through a power line. Fisher teaches that batteries and a power cord are interchangeable as means for supplying power to a portable tonometer (col. 9, lines 3-15). It would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made that a power line could be provided in lieu of batteries in a device similar to that of Rathjen ('400), as modified by Rathjen ('686), as a design choice in light of the teachings of Fisher, merely substituting one known power source for another that is known to be equally effective in powering a tonometer.

Response to Arguments

12. Applicant's arguments filed November 21, 2005 have been fully considered but they are not persuasive. Applicant contends that Rathjen ('400) fails to teach or suggest a contact tonometer having a single contact surface and a single MEMS device connected to the contact surface, where the tonometer is adapted such that only a single contact surface and a single MEMS device are required for sensing IOP. The Examiner respectfully disagrees.

Applicant first contends that Rathjen describes a device that determines eye pressure by acquiring data from multiple pressure sensors. The Examiner notes that the claim language only requires a single contact surface and a single MEMS *device*. The claim language does not require a *single MEMS pressure sensor*. The Examiner respectfully submits that the pressure sensor array of Rathjen, when taken as a whole, may be considered a single MEMS device. Moreover, the entire distal contact surface of array (11) may be considered to be a single contact surface. In view of the foregoing, the contact tonometer of Rathjen can be interpreted to comprise a single contact surface and a single MEMS device connected to the contact surface, where the tonometer is adapted such that only a single contact surface and a single MEMS device are required for sensing IOP. The rejections under 35 USC 102(e) citing Rathjen ('400) are maintained.

Furthermore, the Examiner notes that independent claims 1 and 26 of the present application include the transitional phrase "comprising." The transitional phrase "comprising" is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. Since the contact tonometer of Rathjen includes at least a single contact surface and at least a single MEMS device and appears fully capable of producing a measurement indicative of IOP

Art Unit: 3736

using only a single contact surface and a single MEMS device selected from the plurality, the contact tonometer of Rathjen ('400) meets the limitations of the claims.

Applicant's argument that Rathjen teaches away from the use of a single contact surface in combination with a single MEMS device by teaching the advantages of using a sensor array is not persuasive for the reasons discussed above. Therefore, the rejections under 103(a) citing the combination of Rathjen ('400) and Fisher are maintained.

Applicant's arguments, see the last paragraph of page 12 and the first paragraph of page 13 of the Remarks filed November 21, 2005, with respect to the rejections of claims 13-25 as being anticipated by Rathjen ('400) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rathjen ('400) in combination with Rathjen ('686).

Additional new grounds of rejection are set forth above in an effort to expedite prosecution of the instant application.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


Art Unit: 3736

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Marmor, II whose telephone number is (571) 272-4730. The examiner can normally be reached on M-TH (7:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Charles A. Marmor, II
Primary Examiner
Art Unit 3736

cam
March 24, 2006